

Attorney Docket No.: J3685(C)
Serial No.: 10/526,850
Filed: March 2, 2005
Confirmation No.: 9359

REMARKS

The subject amendment is offered in a good faith effort to advance the prosecution of the subject application and to consolidate the issues for appeal. Entry thereof is respectfully requested.

Claim 1 has been amended to incorporate the requirements of claim 8. Additionally, claim 1 has been amended to specify that the composite particles are incorporated into the hair treatment composition as an aqueous dispersion without being dried subsequent to their formation. See, for example, page 27, lines 4 to 6. Claim 1 has also been amended to further specify the composition of the charged organic molecule. See for example, page 14, line 16 to page 15, line 6. Claim 8 has been cancelled without prejudice.

Claims 1-9, 11 and 14-16 stand rejected under 35USC 103(a) as unpatentable over Nakama et al. (EP 500 941). Claims 1, 9 and 10 stand rejected under 35 U.S.C. 103(a) as unpatentable over Nakama et al. as applied to claim 9 and further in view of Lan et al. (US 6,399,690). Claims 18 and 19 stand rejected under 35 U.S.C. 103(a) over Nakama et al. in view of Nersesian et al. (US 3,876,760). These rejections are respectfully traversed.

Pursuant to the subject invention it was found that composite particles comprising a clay with a net surface charge, an oppositely charged organic molecule and a water insoluble hair benefit agent which is a silicone polymer, a mixture of silicones or a finely divided solid, added as an aqueous dispersion to a hair treatment composition such as, for example, a conditioner or a shampoo, without being dried subsequent to their formation provides a means of enhancing the deposition of the benefit agent while leaving the hair feeling clean, light and airy.

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Applicants note that in the subject invention the hair benefit agent forms a part of the composite particles themselves and that the weight ratio of the clay to the water insoluble hair benefit agent is such that the composite particles contain, by weight, at least as much hair benefit agent as clay. Without wishing to be bound by theory, it has been postulated that the clay and charged organic molecule form a complex within which the hair benefit agent may be trapped or encapsulated. See the specification at page 6, lines 12 to 15. Incorporation of the composite particles as an aqueous dispersion that is added without drying the composite particles is thought to preserve this structure.

Table 6 of the subject application compares the Si deposition of compositions that include Comparative Example B (a conditioner composition that includes 0.5% of the added silicone emulsion DC-1784) and Example 3, a conditioner composition that includes hectorite clay/BTAC/DC1784 composite particles added to the composition as the aqueous dispersion P3 prepared according to Example 1 in an amount sufficient to provide the composition with an equivalent DC-1784 content of 0.5%). Hair switches treated with Comparative Example B were measured to have an average silicone deposition of 227.9 ppm; in contrast, hair switches treated with Example 3 had an average silicone deposition of 1504.0 ppm. Thus, the composite clay/charged organic molecule/silicone particles were show to deposit significantly greater amounts of silicone than the silicone emulsion per se.

Nakamara et al. is directed to the production of a complex formed from an aqueous solution of an ampholytic surfactant or the like and certain fatty acids. Nakamara et al. discloses that when these components are mixed, a complex insoluble in both water and oil is produced. Nakamara et al. discloses that this complex is "completely" different from its surfactant and fatty acid starting materials and is more than simply a mixture thereof. See page 6, lines 43 to 46. The complex

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is disclosed as having utility as an emulsifier in a variety of cosmetic compositions including hair care products. Clay minerals, including clays modified with a cationic surfactant are disclosed as being "optionally used in the present invention", however, there is nothing in the citation that discloses or suggests the production of a composite complex of charged clay, oppositely charged organic molecule and skin benefit agent as described by the subject claims. Moreover, there is nothing in Nakamara et al. that discloses or suggests the incorporation of such skin benefit agent-containing composite particles as an aqueous dispersion that is added without drying the composite particles subsequent to their formation. Nor is there anything in Nakamara et al. that discloses or suggests the use of such composite particles as a vehicle by which skin benefit agent can be more effectively deposited on the hair.

Lan et al. discloses intercalated layered materials prepared by contacting, and thereby intercalating, a layered swellable silicate material (e.g., a phyllosilicate) with a spacing/coupling agent that is multi-positively charged, preferably dual-charged, and co-intercalation of the layered material with a co-intercalant (as co-intercalant polymerizable reactants, or as the oligomer co-intercalant or polymer co-intercalant) to form nano-composite materials. The patent discloses that the phyllosilicates are swelled or intercalated by sorption of a multi-charged spacing/coupling agent to form a layered organoclay which is simultaneously or subsequently co-intercalated with a co-intercalant polymerizable monomer, polymerizable oligomer, or polymer. See column 9, lines 55 to 61. As regards simultaneous co-intercalation, at column 1, lines 15 to 31 Lan et al. states:

The present invention is directed to intercalated layered materials and, optionally, exfoliates thereof, prepared by contacting, and thereby intercalating, a layered silicate material, e.g., a phyllosilicate, such as a smectite clay, with a spacing/coupling agent that is multi-positively charged (hereinafter "multi-charged"), preferably dual-charged, and co-intercalation of the layered material with a co-intercalant (as co-intercalant polymerizable

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reactants, or as the oligomer co-intercalant or polymer co-intercalant) to form nanocomposite materials. The co-intercalant monomer, oligomer or polymer can be intercalated after or together with intercalation of the multi-charged spacing/coupling agent, such as by direct compounding, e.g., by combining a multicharged onium ion-intercalated layered material and a co-intercalant monomer, polymer or oligomer in a mixing or extruding device to produce the co-intercalated layered material and the nanocomposite.

The multi-charged spacing/coupling agent disclosed by Lan et al. is identified as a monomeric organic compound that includes at least two positively charged atoms such as two or more protonated nitrogen atoms, two or more positively charged phosphorous atoms, two or more positively charged sulfur atoms, two or more positively charged oxygen atoms, or any combination of two or more of such positively charged atoms that are spaced by at least two substituted or unsubstituted carbon atoms. The multi-charged spacing/coupling agent functions, in part, to expand the spacing between the clay layers, swelling the clay. Lan et al. does not disclose or suggest composite particles containing the charged organic molecule described by the subject invention. The intercalated clays of Lan et al. are structurally different from both the composite particles of the subject invention and the treated clays disclosed by Nakamara et al.

Nersesian et al. is directed to hair dressing compositions that contain a hair substantive quaternary resin and, as an additional optional component an antidandruff agent.

To summarize, there is nothing in these citations, individually or in combination, that discloses or suggests the composite interpolymers of the subject invention or their use thereof as a vehicle for deposition of a hair benefit agent as described by the subject claims. Moreover, there is nothing in the citations, individually or in combination that would lead one skilled in the art to conclude that such composite

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particles would provide a significant improvement in hair benefit agent deposition; such a finding is both surprising and unexpected.

In view of the foregoing, reconsideration and allowance of the subject claims is respectfully requested.

If a telephone conversation would be of assistance in advancing the prosecution of the present application, applicants' undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,



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